



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

52

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,329	06/27/2001	Marcus Peinado	MSFT-164268.1	1912
41505	7590	04/20/2005	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE - 46TH FLOOR PHILADELPHIA, PA 19103			SHIFERAW, ELENI A	
			ART UNIT	PAPER NUMBER
			2136	
DATE MAILED: 04/20/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/892,329

**Applicant(s)**

PEINADO ET AL.

**Examiner**

Eleni A Shiferaw

**Art Unit**

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

K

**DETAILED ACTION**

1. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 1-46 are presented for examination.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Vu et al. (Vu, Patent No.: US 6,557,104 B2).

As per claim 1, Vu teaches a secure processor for a computing device, the processor being operable in a normal mode and a preferred mode, the processor including a security kernel for being instantiated on the processor when the processor enters into the preferred mode (Vu col. 7 lines 17-20, and col. 5 lines 25-37) and a security key accessible by the instantiated security kernel when the processor is operating in the preferred mode (Vu col. 4 lines 52-57), the security

Art Unit: 2136

kernel employing the accessed security key during the preferred mode to authenticate a secure application on the computing device (Vu col. 5 lines 36-40 and col. 7 lines 7-11), wherein the security kernel allows the processor to be trusted to keep hidden a secret of the application (Vu col. 5 lines 25-47).

As per claim 15 and 31, Vu teaches a method/medium for a secure processor to instantiate and authenticate a secure application thereon by way of a security kernel, the method comprising:

- entering a preferred mode where a security key of the processor is accessible (Vu col. 5 lines 25-35);

- instantiating and running a security kernel, the security kernel:

- accessing the security key (Vu col. 5 lines 35-36);

- applying the accessed security key to decrypt at least one encrypted key for the application (Vu col. 5 lines 35-40);

- storing the decrypted key(s) in a location where the application will expect the key(s) to be found (Vu col. 6 lines 65-col. 7 lines 11); and

- authenticating the application on the processor (Vu col. 5 lines 36-40, and col. 7 lines 7-11); and

- entering a normal mode from the preferred mode after the security kernel authenticates the application (Vu Fig. 2 No. 25 and col. 5 lines 42-47),

- where the security key is not accessible; wherein the security kernel allows the processor to be trusted to keep hidden the key(s) of the application (Vu col. 4 lines 63-col. 5 lines 9).

As per claim 25 and 41, Vu teaches a method/medium for a secure processor to instantiate one of a plurality of available secure applications thereon by way of a security kernel, the method comprising:

setting a chooser value to a value corresponding to a chooser application upon power-up (Vu col. 4 lines 12-39, and col. 5 lines 1-4 and 18-20);

entering a preferred mode upon a power-up CPU reset and instantiating the security kernel, the security kernel determining that the chooser value corresponds to the chooser application and therefore authenticating same, the chooser application being instantiated (Vu col. 4 lines 52-col. 5 lines 8, and col. 5 lines 36-40);

entering a normal mode after the chooser application is instantiated and leaving same to run, the chooser application presenting the plurality of available applications for selection by a user (Vu col. 5 lines 40-44 and fig. 2 No. 25);

receiving a selection of one of the presented applications to be instantiated (Vu col. 5 lines 32-40);

setting the chooser value to a value corresponding to the selected application (Vu col. 4 lines 12-39 and page 5 lines 18-20);

entering a preferred mode upon an executed CPU reset and instantiating the security kernel, the security kernel determining that the chooser value corresponds to the selected application and therefore authenticating same, the selected application being instantiated (Vu col. 4 lines 52-col. 5 lines 8 and col. 5 lines 36-40);

entering a normal mode after the selected application is instantiated and leaving same to run (Vu col. 5 lines 40-44 and fig. 2 No. 25);

wherein the security kernel allows the processor to be trusted to keep hidden a secret of the chooser application and a secret of the selected application (Vu col. 4 lines 63-col. 5 lines 29).

As per claims 28 and 44 a method for a secure processor to instantiate a secure application thereon, the method comprising:

instantiating a first security kernel which employs symmetric cryptography (Vu col. 5 lines 32-36, and col. 7 lines 31-36);

instantiating by way of the instantiated first security kernel a second security kernel which employs asymmetric cryptography (Vu col. 5 lines 36-40, and col. 4 lines 63-col. 5 lines 9); and

authenticating by way of the instantiated second security kernel the secure application (Vu col. 5 lines 32-40).

As per claim 2, Vu teaches the processor in combination with the application (Vu col. 1 lines 18-29).

As per claim 3, Vu teaches the processor wherein the application is selected from a group consisting of a digital rights management (DRM) system and a banking/financial system (Vu col. 1 lines 18-29).

As per claim 4, Vu teaches the processor wherein the security kernel automatically authenticates a particular application (Vu col. 1 lines 18-29, and col. 5 lines 25-48).

As per claim 5, Vu teaches the processor wherein the security kernel initially authenticates a chooser application that allows a user to select from at least one available applications on the computing device (Vu col. 5 lines 25-40, and col. 1 lines 1-29).

As per claim 6, Vu teaches the processor wherein the security kernel employs the accessed security key during the preferred mode to decrypt at least one encrypted key for the application (Vu col. 6 lines 65-66).

As per claim 7, Vu teaches the processor in combination with the computing device (Vu col. 2 lines 53-61).

As per claim 8, Vu teaches the processor wherein the computing device is a portable computing device (Vu col. 7 lines 12-17).

As per claim 9, Vu teaches the processor further comprising a storage space, the security kernel being permanently stored in the storage space (Vu col. 4 lines 22-33, and fig. 5 no. 66).

As per claim 10, Vu teaches the processor further comprising a storage space, the security key

being permanently stored in the storage space (Vu col. 4 lines 22-33, and fig. 5 no. 66).

As per claim 13, Vu teaches the processor wherein such processor enters preferred mode whenever a predefined initializing processor action is performed (Vu Fig. 1 No. 7).

As per claim 14, Vu teaches the processor wherein such processor enters preferred mode whenever a CPU reset is performed (Vu col. 3 lines 22-27).

As per claims 16 and 32, Vu teaches the method/medium wherein entering the preferred mode comprises entering the preferred mode upon a CPU reset (Vu col. 4 lines 12-39 and col. 5 lines 18-20).

As per claims 17 and 33, Vu teaches the method/medium further comprising erasing data in a cache of the processor prior to instantiating the security kernel (Vu col. 5 lines 59-63).

As per claims 18 and 34, Vu teaches the method/medium further comprising erasing data in a cache of the processor after entering normal mode (Vu col. 5 lines 42-47).

As per claims 11, 19 and 35, Vu teaches the method/medium wherein the security kernel employs the accessed security key during the preferred mode to authenticate/verify the application prior to instantiation thereof (Vu col. 5 lines 35-40).



As per claims 12, 20 and 36, Vu teaches the method/medium wherein the security kernel performs a hash/MAC (message authentication code) over at least a portion of the application and then compares the hash/MAC to a hash/MAC corresponding to the application (Vu col. 7 lines 1-11).

As per claims 21-22, 29, 37-38, and 45, Vu teaches the method/medium wherein the security key of the processor is a symmetric key and the application is instantiated from a code image including a main body and a header including:

KCPU (KMAN)	KMAN encrypted according to KCPU
MAC (main body, KMAN)	message authentication code of the main body under KMAN
KMAN (KCODE)	KCODE encrypted according to KMAN

where KCPU is the security key, KMAN is a device key of the portable device independent of the security key, and KCODE is the secret of the application, and

wherein the security kernel applying the accessed security key to decrypt at least one encrypted key for the application comprises:

applying KCPU to KCPU (KMAN) to produce KMAN (Vu col. 6 lines 64-65;  
encrypted encryption key);

computing MAC (main body, KMAN) (Vu col. 5 lines 32-40 and col. 7 lines 1-11);

comparing the computed MAC to MAC (main body, KMAN) from the header to determine if the code image has been changed (Vu col. 5 lines 32-40 and col. 7 lines 1-11); and

if the MACs match, applying KMAN to KMAN (KCODE) to produce KCODE (Vu col. 5 lines 32-40 and col. 7 lines 1-11).

As per claim 23, 30, 39, and 46, Vu teaches the method/medium wherein the security key of the processor is a private key of a public key--private key pair and the application is instantiated from a code image including a main body and a header including:

public key (KCODE)	KCODE encrypted according to the public key
--------------------	---

where KCODE is the secret of the application, and

wherein the security kernel applying the accessed security key to decrypt at least one encrypted key for the application comprises applying the security key as the private key to public key (KCODE) to produce KCODE (Vu col. 7 lines 31-35).

As per claims 24 and 40, Vu teaches the method/medium wherein the security key of the processor is a private key of a public key-private key pair and the application is instantiated from a code image including a main body and a header including:

public key (HASH (main body), KCODE)	Hash of the main body and KCODE, both
--------------------------------------	---------------------------------------

	encrypted according to the public key
--	---------------------------------------

where KCODE is the secret of the application, and

wherein the security kernel applying the accessed security key to decrypt at least one encrypted key for the application comprises:

computing HASH (main body) (Vu col. 5 lines 32-40, col. 7 lines 1-11 and lines 31-35);

applying the private key to public key (HASH (main body), KCODE) to produce HASH (main body) and KCODE (Vu col. 5 lines 32-40, col. 7 lines 1-11 and lines 31-35);

comparing the computed HASH to the produced HASH to determine if the code image has been changed (Vu col. 5 lines 32-40, col. 7 lines 1-11 and lines 31-35); and

if the HASHs match, employing the produced KCODE as appropriate (Vu col. 5 lines 32-40, col. 7 lines 1-11 and lines 31-35).

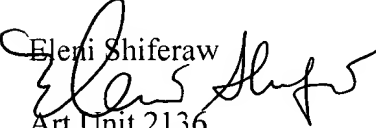
As per claims 26 and 42, Vu teaches the method/medium further comprising setting the chooser value to the value corresponding to the chooser application upon the selected application being authenticated by the security kernel, wherein upon execution of a CPU reset, the security kernel determines that the chooser value corresponds to the chooser application 72c and therefore authenticates same (Vu col. 4 lines 12-39 and col. 5 lines 18-20).


As per claims 27 and 43, Vu teaches the method/medium further comprising storing the chooser value in a memory location not affected by a CPU reset so that the stored chooser value is available after same (Vu col. 5 lines 11-23).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eleni A Shiferaw whose telephone number is 571-272-3867. The examiner can normally be reached on Mon-Fri 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eleni Shiferaw  
  
Art Unit 2136  
April 11, 2005

  
4/11/05